

Claims

1. A handheld computing device comprising:
a receiver capable of receiving voice communications;
a speaker coupled to the receiver, wherein the speaker is capable of outputting the
5 voice communications as audible speech;
a speech-to-text processor coupled to the receiver, wherein the speech-to-text
processor is capable of converting the voice communications to text; and
a display coupled to the speech-to-text processor, wherein the display is capable
of displaying the text corresponding to the voice communications.

10 2. The handheld computing device of claim 1 wherein the receiver is capable of
receiving the voice communications in digital and analog formats.

15 3. The handheld computing device of claim 1 wherein the receiver comprises a
cellular modem integrated into the handheld computing device.

20 4. The handheld computing device of claim 1 wherein the handheld computing
device is coupled to a cellular telephone, and the cellular telephone provides the voice
communications to the receiver.

25 5. The handheld computing device of claim 1, wherein the voice communications
are in digital format, and further comprising a digital-to-analog converter capable of
converting the digital voice communications to analog signals compatible with the
speaker.

6. The handheld computing device of claim 1 wherein the speech-to-text processor
comprises one of: software capable of being executed by a microprocessor from a
memory and an integrated circuit chip.

7. The handheld computing device of claim 1, further comprising an input/output device coupled to the display and capable of receiving input.

8. A handheld computing device comprising:

an input/output device for inputting text;

a transceiver capable of receiving and transmitting voice communications;

a speaker coupled to the transceiver, wherein the speaker is capable of outputting the received voice communications as audible speech;

a speech-to-text processor coupled to the transceiver, wherein the speech-to-text

processor is capable of converting the received voice communications to text;

a display coupled to the input/output device and the speech-to-text processor, wherein the display is capable of displaying the input text and the text corresponding to the received voice communications; and

a text-to-speech processor coupled to the input/output device and the transceiver,

wherein the text-to-speech processor is capable of converting the input text to speech for transmission by the transceiver.

9. The handheld computing device of claim 8 wherein the transceiver is capable of receiving and transmitting the voice communications in digital and analog formats.

10. The handheld computing device of claim 8 wherein the transceiver comprises a cellular modem integrated into the handheld computing device.

11. The handheld computing device of claim 8 wherein the handheld computing device is coupled to a cellular telephone, and the cellular telephone provides the voice communications to the receiver.

12. The handheld computing device of claim 8, wherein the voice communications are in digital format, and further comprising a digital-to-analog converter capable of converting the digital voice communications to analog signals compatible with the speaker.

13. The handheld computing device of claim 8 wherein the speech-to-text processor comprises one of: software capable of being executed by a microprocessor from a memory and an integrated circuit chip.

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14. The handheld computing device of claim 8 wherein the input/output device comprises at least one of: a virtual keyboard displayed on a touch pad, a plurality of keys, and a port for coupling an external device to the handheld computing device.

10 15. The handheld computing device of claim 8 wherein the handheld computing device comprises a personal digital assistant.

16. A method of communicating comprising:
receiving cellular voice communications in a handheld computing device;
15 converting the voice communications to text; and
displaying the text on a display screen of the handheld computing device.

17. The method of claim 16, further comprising outputting the voice communications as audible speech on a speaker of the handheld computing device.

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18. The method of claim 16 wherein the voice communications are received in digital and analog formats.

19. The method of claim 16, wherein the voice communications are in digital format,
25 and further comprising converting the digital voice communications to analog signals compatible with a speaker of the handheld computing device.

20. A method of communicating comprising:
- receiving cellular voice communications in a handheld computing device;
 - converting the voice communications to text;
 - displaying the text on a display screen of the handheld computing device;
- 5 receiving text communications from a user of the handheld computing device;
- converting the text communications to voice signals; and
 - transmitting the voice signals.

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